

Tennessee Pollution Prevention Partnership Success Story



Tennessee Koyo Steering Systems
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Water Usage Cut In Half

The Member

Tennessee Koyo Steering Systems Co. (TKS) has been in operation at their Monroe County Vonore, TN site since 1989. The facility of 345,000 sq ft and 800 employees is located on property adjoining Lake Tellico. Currently the facility produces over 8,000 rack and pinion steering systems per day for domestic and international original equipment auto manufacturers. A just-in-time supplier strategically located to their customers, Tennessee Koyo ships numerous times per day via common carriers on milk run routes. Tennessee Koyo is ISO 14000 certified and has a very positive attitude toward environmental management and protecting the environment. Tennessee Koyo is committed to complying with environmental laws, regulations, and other requirements and to continually improving their environmental performance.



The Story

Customer specifications for the steering systems manufactured by TN Koyo specify metal finishing on exposed surfaces in order to prevent oxidation and ultimately extend the life of the parts while making them more aesthetically pleasing. Since automotive steering system components are often visible on the vehicles, a significant surface area of the steering system requires metal finishing. Tennessee Koyo made the commitment from the beginning of their

production of these parts to powder coat them instead of painting because powder coating is more VOC friendly to the environment. Even with its significant advantages over painting, their powder coating operation still provided opportunity for enhancement. The environmental management team studied the process extensively and, based on analysis of their ISO 14001 aspects and impacts, established a goal to reduce the amount of spent water from the powder coat wash lines going to wastewater treatment by fifty percent in order to achieve the optimal environmental impact. The system has historically emitted 7.5 gal/min of waste wash water to the DMP treatment unit requiring a continuous equal amount of replacement fresh water and chemical additives required for the washer. A fifty percent reduction of water and chemicals for this process will save 1,620,000 gallons of water per year (equivalent usage of 15 households per year), reduce chemical usage by 50%, and save Koyo an estimated \$50,000 per year.

The Success

Tennessee Koyo has installed computerized controls to eliminate the continuous flow, monitor the water within the washer system, and release it from the tanks only when it reaches a pre-defined stage of contamination.

The Pollution Prevented

In addition to saving 135,000 gallons of water per month, the use of Sulfuric Acid, Sodium Hydroxide, Klairaid, and Flocking has likewise been reduced by 50%. The end result is that TN Koyo's process change saved them in excess of \$50,000 while providing a positive impact on the environment through the use of less water and fewer chemicals.

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